

Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: FAIL-SAFE

Report Number: P560972

Luminaire Tested: FSR-12-4-LD4-1LO-35-UNV-81-96-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560972  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/20/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-12-4-LD4-1LO-35-UNV-81-96-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

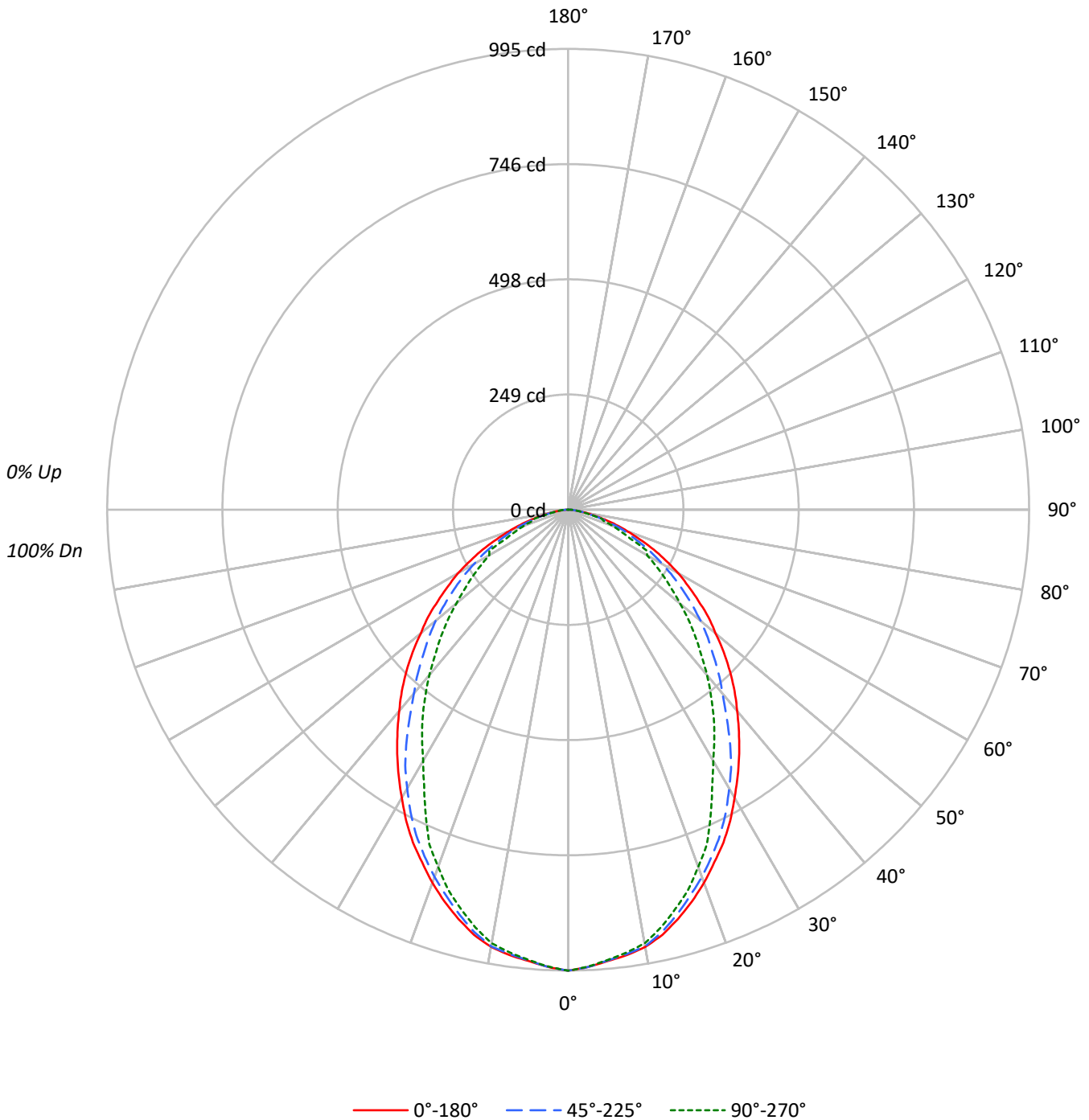
Lumens per Lamp: N/A  
Luminaire Lumens: 1954.0 lumens  
Efficiency: N/A  
Efficacy: 83.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20					20					20					20					
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87					87			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75					75			
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65					65			
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56					56			
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50					50			
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44					44			
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40					40			
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36					36			
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33					33			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30					30			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	2678	2678	2678
5°	2642	2639	2636
10°	2619	2616	2597
15°	2549	2523	2488
20°	2455	2416	2349
25°	2354	2303	2159
30°	2231	2160	1945
35°	2113	1996	1799
40°	1993	1819	1637
45°	1878	1682	1480
50°	1739	1561	1320
55°	1609	1415	1182
60°	1474	1263	1059
65°	1297	1107	938
70°	1068	969	797
75°	849	741	778
80°	570	535	499
85°	355	426	497

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1878 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	92.7	4.7
10°-20°	254.3	13.0
20°-30°	352.0	18.0
30°-40°	375.4	19.2
40°-50°	342.4	17.5
50°-60°	268.3	13.7
60°-70°	174.9	8.9
70°-80°	77.5	4.0
80°-90°	16.7	0.9
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	699.0	35.8
0°-40°	1074.3	55.0
0°-60°	1685.0	86.2
0°-90°	1954.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1954.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	995	995	995	995	995	
5°	978	977	977	976	976	93
15°	915	915	906	896	893	257
25°	793	788	776	748	727	364
35°	643	639	608	562	548	402
45°	494	483	442	405	389	380
55°	343	332	302	266	252	308
65°	204	192	174	177	147	201
75°	82	76	71	68	75	88
85°	12	13	14	15	16	16
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	995.3	995.3	995.3	995.3	995.3
2.5°	988.4	988.4	988.4	987.3	987.3
5°	978.1	976.9	976.9	975.8	975.8
7.5°	970.0	968.9	967.7	966.6	964.3
10°	958.5	958.5	957.4	951.6	950.5
12.5°	940.1	939.0	934.4	926.3	924.0
15°	914.8	914.8	905.6	896.4	892.9
17.5°	887.2	886.0	874.5	865.3	860.7
20°	857.3	855.0	843.5	828.5	820.4
22.5°	823.9	823.9	810.1	790.5	782.5
25°	792.8	788.2	775.6	747.9	727.2
27.5°	757.1	750.2	736.4	697.3	673.2
30°	718.0	714.6	695.0	644.4	626.0
32.5°	681.2	675.5	654.7	601.8	586.8
35°	643.2	638.6	607.6	561.5	547.7
37.5°	605.3	599.5	560.4	523.6	506.3
40°	567.3	560.4	517.8	484.4	466.0
42.5°	531.6	522.4	481.0	445.3	424.6
45°	493.6	483.3	441.9	405.0	388.9
47.5°	455.7	446.5	408.5	370.5	352.1
50°	415.4	407.3	372.8	334.8	315.3
52.5°	382.0	369.4	336.0	298.0	281.9
55°	342.9	332.5	301.5	265.8	252.0
57.5°	307.2	296.9	268.1	234.7	223.2
60°	273.9	258.9	234.7	206.0	196.8
62.5°	237.0	225.5	204.8	180.7	192.2
65°	203.7	192.2	173.8	177.2	147.3
67.5°	166.8	161.1	145.0	128.9	124.3
70°	135.8	128.9	123.1	105.9	101.3
72.5°	108.2	101.3	93.2	84.0	80.5
75°	81.7	75.9	71.3	67.9	74.8
77.5°	56.4	54.1	50.6	47.2	46.0
80°	36.8	35.7	34.5	33.4	32.2
82.5°	21.9	21.9	21.9	21.9	21.9
85°	11.5	12.7	13.8	15.0	16.1
87.5°	6.9	6.9	8.1	9.2	10.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)